CLAIMS

What is claimed is:

1. A pharmaceutical composition comprising a polypeptide comprising an HMGB B box or a functional variant thereof, in an amount sufficient to treat a disease or condition by increasing an immune response in an individual administered said pharmaceutical composition.

2. The pharmaceutical composition of Claim 1, wherein said HMGB B box is mammalian.

3. The pharmaceutical composition of Claim 2, wherein said HMGB B box is human.

4. The pharmaceutical composition of Claim 3, wherein said polypeptide comprises an HMGB1 B box polypeptide.

5. The pharmaceutical composition of Claim 4, wherein said polypeptide consists of an HMGB1 B box polypeptide.

6. The pharmaceutical composition of Claim 1, further comprising a vaccine.

7. The pharmaceutical composition of Claim 6, further comprising an adjuvant.

8. The pharmaceutical composition of Claim 7, wherein said adjuvant is selected from the group consisting of one or more immunostimulatory oligonucleotides, an imidazoquinoline, monophosphoryl lipid A, and detoxified lipopolysaccharide.

9. The pharmaceutical composition of Claim 8, wherein said immunostimulatory oligonucleotides comprise unmethylated CpG sequences.

10. An antibody attached to a polypeptide comprising an HMGB B box or a functional variant thereof.

11. The antibody of Claim 10, wherein said HMGB B box is mammalian.

12. The antibody of Claim 11, wherein said HMGB B box is human.

13. The antibody of Claim 12, wherein said polypeptide comprises an HMGB1 B box polypeptide.

14. The antibody of Claim 13, wherein said polypeptide consists of an HMGB1 B box polypeptide.

15. The antibody of Claim 10, wherein said antibody binds a tumor-associated polypeptide.

16. The antibody of Claim 10, wherein said antibody is in a pharmaceutically acceptable carrier.

17. A method of stimulating or increasing an immune response in an individual in need of immunostimulation, said method comprising administering to said individual a polypeptide comprising an HMGB B box or a functional variant thereof, in a amount sufficient to stimulate or increase said immune response.

18. The method of Claim 17, wherein said individual is being treated for cancer.

19. The method of Claim 17, wherein said HMGB B box is mammalian.

20. The method of Claim 19, wherein said HMGB B box is human.

21. The method of Claim 20, wherein said polypeptide comprises an HMGB1 B box.

22. The method of Claim 21, wherein said polypeptide consists of an HMGB1 B box.

23. The method of Claim 17, wherein said polypeptide is co-administered with a vaccine.

24. The method of Claim 23, wherein said polypeptide is co-administered with a further adjuvant.

25. The method of Claim 24, wherein said adjuvant is selected from the group consisting of one or more immunostimulatory oligonucleotides, an imidazoquinoline, monophosphoryl lipid A, and detoxified lipopolysaccharide.

26. The method of Claim 25, wherein said immunostimulatory oligonucleotides comprise unmethylated CpG sequences.

27. The method of Claim 17, wherein said administration is systemic.

28. The method of Claim 17, wherein said administration is localized to a target site.

29. The method of Claim 17, wherein said polypeptide is attached to an antibody specific to a target site in the individual in need of immunostimulation.

30. The method of Claim 17, wherein said polypeptide is in a pharmaceutically acceptable carrier.

31. A method of treating cancer in an individual, said method comprising administering to said individual a therapeutically effective amount of a polypeptide comprising an HMGB B box or a functional variant thereof.

32. The method of Claim 31, wherein said HMGB B box is mammalian.

33. The method of Claim 32, wherein said HMGB B box is human.

34. The method of Claim 33, wherein said polypeptide comprises an HMGB1 B box polypeptide.

35. The method of Claim 34, wherein said polypeptide consists of an HMGB1 B box polypeptide.

36. The method of Claim 31, wherein said polypeptide is co-administered with a vaccine.

37. The method of Claim 36, wherein said polypeptide is co-administered with a further adjuvant.

38. The method of Claim 37, wherein said adjuvant is selected from the group consisting of one or more immunostimulatory oligonucleotides, an imidazoquinoline, monophosphoryl lipid A, and detoxified lipopolysaccharide.

39. The method of Claim 38, wherein said immunostimulatory oligonucleotides comprise unmethylated CpG sequences.

40. The method of Claim 31, wherein said administration is systemic.

41. The method of Claim 31, wherein said administration is localized to a target site.

42. The method of Claim 41, wherein said target site is a tumor.

43. The method of Claim 31, wherein said polypeptide is attached to an antibody.

44. The method of Claim 43, wherein said antibody binds a tumor-associated polypeptide.

45. The method of Claim 31, wherein said polypeptide is in a pharmaceutically acceptable carrier.